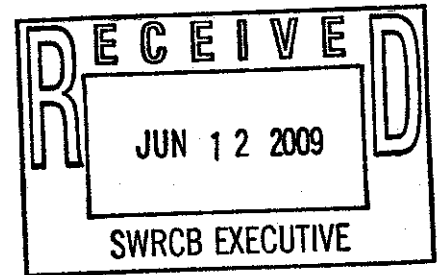


United States Department of the Interior

2009 Periodic Review Staff Report Comments

June 15, 2009



Introduction

The United States Department of the Interior (Interior) on behalf of the Bureau of Reclamation (Reclamation) and the Fish and Wildlife Service (Service) is pleased to provide these comments on the Staff Report for the Periodic Review of the 2006 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. In this Staff Report, the State Water Resources Control Board (Board) staff is recommending that the Board further review the following objectives: Delta Outflow; Export/Inflow; Delta Cross Channel Gate Closure; Suisun Marsh; Reverse Flow; and Floodplain Habitat Flow. The staff is also recommending changes to the 2006 Water Quality Control Plan's (WQCP) Program of Implementation. Specifically, staff recommends changes to the Monitoring and Special Studies Program, as well as updating programs of implementation for objectives that the Board ultimately determines merit amendment.

The Board staff is not recommending any changes to the 2006 Water Quality Control Plan's objectives for: Ammonia; Toxicity; Fish Screens; or establishing Biological Indicators. The Staff Report includes a discussion on southern Delta salinity and San Joaquin River flow objectives, but the Board is already undertaking a separate process to review those objectives.

As we understand the process, if the Board adopts the Staff Report at its regularly scheduled July 7, 2009, meeting, that will conclude the 2009 Periodic Review. The Staff Report will set priorities for the Board to further investigate. Amendments to the Plan are not proposed at this time, but may occur following further investigation by the Board.

Southern Delta Salinity and San Joaquin River Flows

We understand that the Board is not undertaking a review of these objectives in the Board's 2009 Periodic Review because the Board is already undertaking a separate review of these objectives. Nonetheless, the Staff Report includes a discussion on these objectives which in our estimation is incomplete and inaccurate. The discussion does not accurately describe the physical setting which contributes to salt loading in the San Joaquin Basin. The Staff Report does not recognize the connection between salinity in the Delta and salinity in the San Joaquin River. The Staff Report misses critical elements of this relationship: the geographic location of the two major export facilities and the intertwined operational effects on slat accumulation in the water distribution facilities. The SWP export facilities are part of the salt loading equation and therefore, must be part of the salt loading solution. The Board has recognized these elements in the past by regulating the two facilities as a single entity.

Clifton Court Forebay is located immediately northwest of the Tracy export facilities. Clifton Court Forebay operations are designed to be tidally influenced. Generally, the gates at Clifton Court are opened near and through high tide and then closed for lower height periods of the tidal cycle. This operation draws water into the forebay to be pumped by the SWP facilities during off peak power periods, in order to pump water with lower priced power. This operation also generally improves the water quality being pumped. This occurs because generally high tide water has the greatest concentration of Sacramento River sourced water, or ocean-based salts. Therefore, simply due to the geographic location being slightly north-west of the Tracy facilities, the SWP generally receives better water quality or a greater percentage of Sacramento River water contributions.

Conversely, due to the operation of Clifton Court Forebay, the federal Tracy export facilities receive a much higher "fingerprinting" of San Joaquin River water source. Clifton Court effectively "gulps" large amounts of the better quality Sacramento River or less ocean-based salts simply due to operationally timing and geographic location.

The combined export facilities and upstream reservoir water resources of the CVP-SWP system are managed to control ocean-based salts in the western delta. Therefore, the ocean-based salts proximity to the export pumps is an effect of combined project operations and the combined project operations contributes to salt loading influences at each of the export facilities. The DCC creates a pathway for Sacramento River water quality to enter the interior delta and is operated, to a degree, to manage ocean-based salt balances. Clifton Court, as a matter of "fingerprinting" receives the largest benefit of the DCC salt balance influences, (although it is a federal facility designed to improve water quality effects in the southern delta).

Simply due to geography, Federal Tracy export facilities receive less "fingerprinting" of Sacramento River water quality and therefore receive a larger percentage of San Joaquin River water quality.

For the reasons stated above, the two facilities cannot be separated in describing their influence on the contribution of salts to the environment south of the export facilities. This includes consideration of the myriad of factors that contribute to salt concentration and loading at the export facilities, including any review of DCC operations or Delta flows for fishery protection.

The SWP export facilities are part of the salt loading equation and must be part of the salt loading solution. The intertwined effects of the CVP-SWP operations on salt distribution cannot be separated. Therefore, the statement "Between 1977 and 1997 the DMC contributed approximately 513,000 tons or 47 percent of the total annual salt load in the San Joaquin River at Vernalis (Central Valley Water Board 2004b)" is overly simplistic as to the how and why the long-term salt balances have been distributed as they have, without recognizing the actual influences in the Delta and its watersheds. Such an overly simplistic statement does not recognize the significant impacts that salinity and flow regulation in the Delta play in salinity management in the San Joaquin basin. This statement is also somewhat out of date, failing to recognize the effects of the implementation of the Westside Regional Drainage Plan over the past twelve years, which has successfully managed agricultural drainage and significantly reduced the

influence of CVP salts on the San Joaquin River, and the fact that Reclamation has met its commitment in D-1641 to meet Vernalis salinity objectives.

Export/Inflow (E/I) Objectives and Reverse Flow (OMR) Objectives

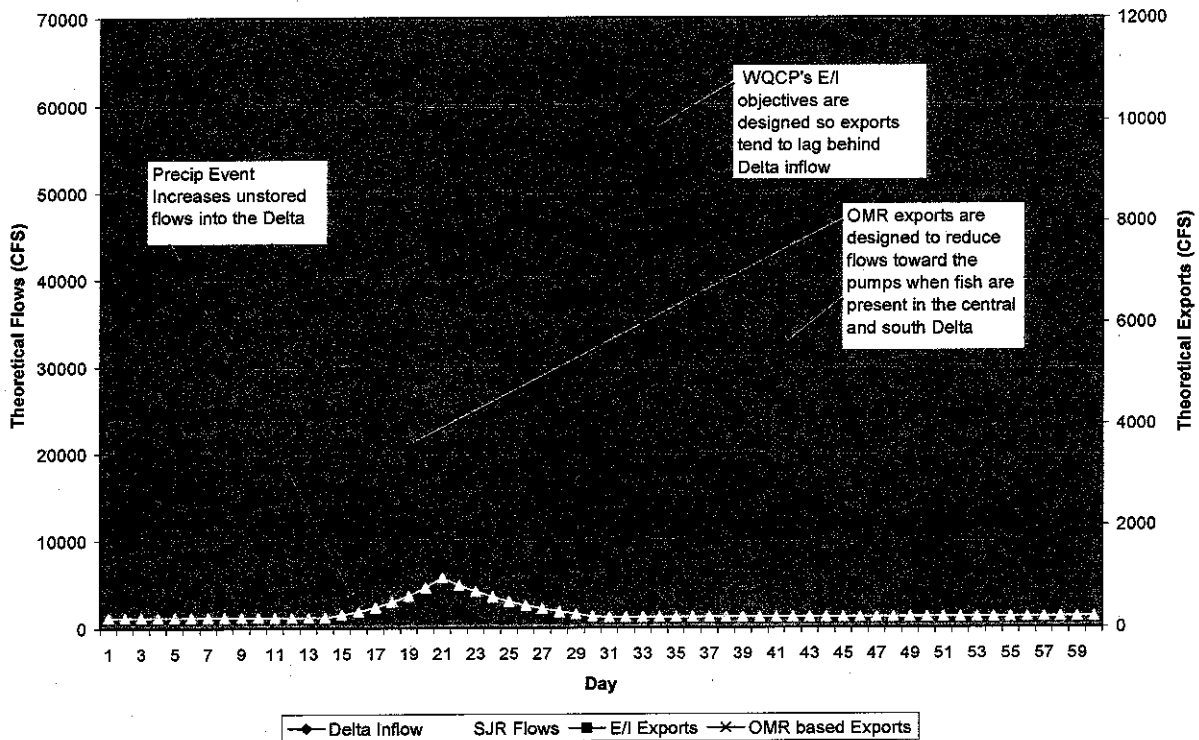
These two sections are attempting to address very similar fishery management objectives; how to manage the export rates and concurrently improve habitat conditions for fish in the Delta and minimize/avoid the salvaging or take of fish at the export facilities.

In general, the WQCP's E/I objectives contribute to the fishery management objectives by lagging in time or delaying the export of water until after the flows entering the Delta have had an opportunity to help provide suitable conditions for the transport of fish to the western Delta.

In general, Old and Middle rivers (OMR) flow objectives contribute to the fishery management objectives by reducing the hydraulic draw on the Old and Middle river channels towards the CVP and SWP export facilities, when fish of concern are indicated to be in the central and south Delta environment. This action also helps to provide suitable conditions for fish to move to the western Delta.

Generally, the two Delta objectives (E/I and OMR) for fishery protection affect CVP/SWP export management capabilities in different ways. It is important that the Board consider this interaction between these objectives when it conducts the hydrologic modeling for the E/I and OMR objectives. A conceptual illustration helps to describe or illuminate this relationship.

Hypothetical Illustration of E/I and OMR Objectives and Subsequent CVP/SWP Exports



In this hypothetical example, a rain event produces substantial inflow into the Delta. To meet the E/I criteria, exports would increase on a lagged time delay of approximately 14 days. This helps provide suitable conditions to give fish an opportunity to move with the flow to the western Delta environment, while allowing the CVP/SWP exports to pump the benefits of the water supply. For the illustration purposes, exports begin to increase on day 16, in response to the precipitation event, and maximize on day 29, returning to previous levels on day 45.

In this hypothetical example, to meet the OMR criteria, CVP/SWP exports would likely be curtailed on the rising limb of the hydrograph due to presence of fish at the export facilities or information regarding the presence of fish in the interior Delta. For illustration purposes, exports are reduced by OMR criteria on day 18 and are held near constant for a 14-day period and the presence of fish has diminished. Exports are allowed to increase the OMR value on day 31 for a 14 day period through day 43 before returning to previous values.

CVP/SWP exports volumes under the E/I objective only would be the E/I export trace. Exports volumes under the OMR objective only would be the OMR export trace. Export volumes under both the E/I and OMR criteria would be the lesser of the two traces.

The main point to this hypothetical is to illustrate that how Delta flow objectives are designed may affect the determination of how much water can be exported by the CVP/SWP on a daily

basis. It is important that the Board consider the interactions of these flow objectives and evaluate them holistically.

Another significant point to this illustration is that a monthly model of the CVP-SWP and Delta environment will not be able to accurately represent this interface of Delta flow objectives on a daily basis. This makes it very difficult to quantify the effects on all the beneficial uses, using monthly models, because the export volumes are highly variable due to daily variations of inflow. Again, it is important that the Board evaluate these Delta flow objectives holistically and consider using a shorter time step when conducting the hydrologic modeling for the E/I and OMR objectives.

Programs of Implementation

Interior strongly recommends the Board consider amending the 2006 Water Quality Control Plan to include the expectation of the need for flexibility in implementing the objectives in the aggregate. Interior believes that this flexibility should be available for protection of Delta and San Joaquin fisheries, as well as protection of water supplies.

This year has shown the difficulty in meeting all goals and objectives set forth in the 2006 Water Quality Control Plan after three consecutive years of drought. The Board needs to think about whether and how it could implement objectives in a manner that can be responsive to crises of fish protection or preservation of drought management supplies.